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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,032	11/30/2000	William Eccleston	THOM-0012	2261
7590	03/11/2004		EXAMINER	
John W Caldwell Woodcock Washburn Kurtz Mackiewicz & Norris 46th Floor One Liberty Place Philadelphia, PA 19103			YUN, JURIE	
			ART UNIT	PAPER NUMBER
			2882	
DATE MAILED: 03/11/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/646,032	<b>Applicant(s)</b> ECCLESTON ET AL.	
	<b>Examiner</b> Jurie Yun	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 is/are allowed.
- 6) ☒ Claim(s) 18-29 and 31-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The amendment filed 1/20/04 has been entered.
2. The allowance of claims 21, 22, and 31-41 is withdrawn in view of 35 U.S.C. 112, first paragraph (please see below).

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 18-29 and 31-41 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A cathode along with an anode, a luminescent screen, any substrates necessary to support the cathode and/or anode, etc., are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The limitation "forming a field emission surface" is functional in nature and not supported by sufficient structure to enable field emission from a polymer cathode as claimed. Accordingly, the recitation is not given any patentable weight. The subject matter claimed is, "A field emission cathode comprising a polymer material", of which the other essential elements necessary to support field emission are not claimed. Such elements include, for example, an anode, a luminescent screen, etc. These elements must be claimed for structural support for enabling field emission. Applicants' disclosure, page 6, lines 16+, recites: "At the low field strength which is sufficient to

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cause field emission from the cathode according to the present invention, emitted electrons may be insufficiently energetic to cause luminescence of a display screen. This problem is experienced when a phosphor screen is used. Hence a preferred form of visual display device according to the present invention comprises a grid positioned with respect to the cathode such as to be capable of causing field emission therefrom, an acceleration anode positioned beyond the grid and a luminescent screen, wherein electrons are selectively emitted from the cathode under the influence of the grid and then accelerated onto the screen with sufficient energy to cause it to luminesce by the acceleration anode."

Also, with respect to method claims 31 and 33, there are no steps recited to form the field emission. It is unclear from the process how field emission is produced.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Rumsby et al. (GB 2233334A).

7. With respect to claim 18, Rumsby et al. disclose a field emission cathode comprising a polymer material forming a field emission surface (page 7, second paragraph).

***Allowable Subject Matter***

8. Claim 30 is allowed.
9. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to disclose a field emission cathode comprising a conjugate polymer material forming a field emission surface, as claimed in claim 30.

***Response to Arguments***

10. Applicant's arguments filed 1/20/04 have been fully considered but they are not persuasive. Applicants submit Rumsby's polymer does not form the surface from which field emission takes place, and that rather the surface from which field emission takes place is formed by the metal layer placed on it. However, this argument is not persuasive because this limitation is not given any patentable weight since there are no structural elements being claimed which would enable field emission to take place. As noted above, the subject matter of Claim 18 is: "A field emission cathode comprising a polymer material". And, Rumsby discloses this. In view of this, claim 18 is still rejected under Rumsby.

Also, the transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps, for example, metal. "Comprising" is a term of art used in claim language which means that the named element(s) are essential, but other elements may be added and still form a construct within the scope of the claim.

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**Conclusion**

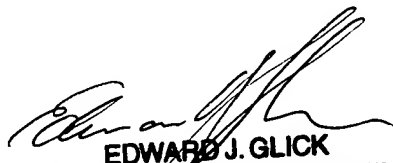
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497.

The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jurie Yun  
February 12, 2004

  
**EDWARD J. GLICK**  
**SUPERVISORY PATENT EXAMINER**